## Wayne Johnson

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| **From:** | "Dan Bauer" <bauer@fnal.gov> |
| **To:** | "Dennis SEITZ" <dseitz@cosmology.berkeley.edu>; "Wayne JOHNSON" <wjohnson@fnal.gov>; "Fritz DeJongh" <fritzd@fnal.gov> |
| **Cc:** | <hansen@fnal.gov> |
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| **Subject:** | Soudan FEB settings |

Hi Dennis, Wayne, Sten, and Fritz,
  I'm not sure who is the current editor of the spreadsheet Wayne started concerning FEB settings, but I had promised to look up the standard operating settings from Soudan. We should have a column for these, and a separate column for test facilities, which use a wider range of settings. Here's the sequence we normally use at Soudan:

Begin run configuration
   For each detector
       Unlock SQUIDs
       Set SQUID ZAP voltage to 0
       For each phonon channel
           Set QET bias to ~ 120 uA (typically +/- 80 uA)
           Set SQUID bias to -85 uA (+/- 20 uA)
           Set SQUID lockpoint to ~2 mV (+/- 0.5 mV)
           Set SQUID open loop gain to 20 (occasionally 10 or 50)
           Set SQUID output offset to 0 (+/- 2 V)
       Turn Auto Zero ON
       Unlock SQUIDS
       Set Charge Bias state to GROUND
       Set LED Bias to ~ 200 uA (ranges 100-5000, either polarity)
       Set LED to multi-pulse mode (and again ground charge)
       Set LED Pulse width to ~ 500 us (+/- 1 ms)
       Set LED rep rate to ~ 3ms (+/- 10 ms)
       Fire LED and wait 0.025 minutes
       Turn off LED
       Set LED Bias to 0

Begin data taking sequence
       Set charge biases to 3-6V, either polarity
       Set charge gain to 10
       Set charge output offsets to 0 (using Autozero)
       Unlock SQUIDS
       Lock SQUIDS
       Take data

Every few hours during data taking
       Pause data
       Ground charge channels
       Unlock SQUIDS
       Go through LED flashing as above
       Go through charge bias and SQUID relocking as above
       Resume data

Dan